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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,792	07/13/2001	Hao-Chih Chen	B-4238 618932-3	4932

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/905,792

Applicant(s)

CHEN, HAO-CHIH

Examiner

Jeanne A. Di Grazio

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**BACKLIGHT UNIT FOR A LIQUID CRYSTAL DISPLAY**

***Priority***

Priority to Taiwan Patent Application No. 90100899 January 16, 2001 is claimed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (USPN 6,480,245 B1) in view of Won (USPN 6,046,785).

Per claim 1: Sakamoto has a sheet-like light source comprising, among other items, a light guide plate with a light receiving lateral side, a first coupling lateral side, and a second coupling lateral side, with a first coupling member on the first coupling lateral side and a second coupling member on the second coupling lateral side [Figure 1, Ref. Item 3]. Sakamoto has a reflector [Ref. Item 4 of Figure 1] with a cover, opening, and first holder [Figure 1, Ref. Item 4]. Although not shown in the figures, the reflector most likely further comprises a second holder if it is to engage with a light source. Note that the light guide plate of Sakamoto has two coupling members; thus, the reflector most likely has two holders. The reflector has an opening positioned toward a light receiving lateral side of a light guide plate. The reflector first holder extends towards a first coupling lateral side and the second holder most likely extends towards a second coupling lateral side [Figure 1]. The reflector furthermore has a first linking member [Figure 1,

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Ref. Item 12] and most likely comprises a second linking member although not specifically illustrated.

Sakamoto does not appear to have a light source specifically installed inside a reflector; however, Sakamoto has a sheet-like light source that includes a lamp, conducting lamp reflector, and light guide plate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto to include a light source installed within a reflector to reduce display deficiencies due to electric noise and for obtaining clearer images [Sakamoto at Col. 1, Lines 11-13].

Sakamoto has first and second coupling members combined with first and second (though not shown) linking members for assembling a reflector and light guide plate [Figure 1]. Sakamoto does not appear to have a predetermined distance formed between the reflector and light guide plate; however, Won has a light guide and lamp positioned within a frame wherein a cross-section of the light guide decreases with distance from the lamp [Col. 2, Lines 41-47]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto in view of Won to make the reflector and light guide at a predetermined distance for tight assembly [Won, Col. 2, Lines 16-17] and reduction of noise and improved image quality as previously noted.

Per claim 2: Sakamoto discloses a protrusion on a frame [Figure 7a, Ref. Item 19a] and a linking member with a recess [Figure 7a, Ref. Item 16] wherein the protrusion is positioned in the recess [Figure 7b]. It would have been obvious to modify Sakamoto to instead place the protrusion on the light guide plate wherein the light guide plate would engage with the reflector

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directly for reduction of noise and clearer images [Sakamoto at Col. 1, Lines 11-13]. Such a change in Sakamoto would also reduce the number of manufacturing steps.

Per claim 3: Sakamoto does not appear to have a protrusion specifically having an area of a top surface larger than an area of a bottom surface; however, Sakamoto does have a cylindrical protrusion with circular ends [Figure 7a and 7b]. Such a configuration of the protrusion will mean that the area of the two surfaces (assumed circular and cylindrical) are not necessarily equal. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto to have a protrusion on the light guide plate with a top surface area larger than a bottom surface area.

Per claims 7-9: Sakamoto et al. does not appear to have a reflecting sheet positioned under a light guide plate, a diffusing means positioned above a light guide plate, and wherein the diffusing means has a diffusing sheet, prism sheet, and protecting film; however, Won discloses a reflecting sheet under a light guide plate, diffusing means above a light guide plate, and diffusing sheet, prism sheet, and protecting film above a light guide plate [Figure 1, Conventional Art]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto et al. in view of Won because such configurations are common in the art of backlight units for reflecting and diffusing light.

Claims 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (USPN 6,480,245 B1) and Won (USPN 6,046,785) in view of Tan (USPN 5,075,824).

Per claims 4 and 5: Sakamoto does not appear to have wedge / triangular wedge shaped protrusions; however, Tan does have an LCD light wedge module for nestingly engaging an

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LCD unit [Figure 1]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto in view of Tan to incorporate wedge shaped protrusions in order to prevent hot spots and to simplify mounting [Tan at Col. 1, Lines 5-7].

Per claim 6: Sakamoto does not appear to have a reflector having an angle formed between a first holder and base cover of less than  $90^0$ ; however, Tan does have a light wedge module wherein a wedge shaped portion [Figure 1, Ref. Item 18] appears to be less than  $90^0$ . Furthermore, Tan has a lamp receiving area within the wedge shaped portion [Col. 2, Lines 55-57]. It would have been obvious to modify Sakamoto in view of Tan to modify a reflector having an angle less than  $90^0$  formed between first holder and base cover and a light guide plate that when heated expands to form a space for which the expanding portion of the light guide plate is received in the space for simplified mounting, to prevent hot spots, and to prevent dust and dirt from interfering with performance [Tan, Col. 1, Lines 43-44 and 45-47].

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

November 26, 2002

  
ROBERT H. KIM  
SUPERVISOR  
TECHNICAL SERVICES